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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
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ART UNIT	PAPER NUMBER
2111	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/736,854	FORD ET AL.	
	Examiner	Art Unit	
	Thomas J. Cleary	2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,5-11 and 15-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5-11 and 15-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6, 11-17, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent number 6,007,228 to Agarwal et al. ("Agarwal") and the - Audio Codec '97 Component Specification, Revision 2.2 ("AC97").

3. In reference to Claim 1, Agarwal discloses an information handling system including: a processor; memory coupled to the processor; glue logic coupled to the processor for facilitating connection of the processor to other devices (See Figure 4 Number 10' and Column 6 Lines 37-45); an audio coder and decoder coupled to the glue logic and including a digital audio output (See Figure 4 Numbers 40, 54 and 58); a first multi-pin docking connector comprising a first single audio pin coupled to the digital audio output (See Figure 4 Number 30); and a docking station (See Figure 4 Number 20') comprising a second multi-pin docking connector comprising a second single audio pin, wherein the second single audio pin is coupled to the first single audio pin (See

Figure 4 Number 30); and a digital audio receiver to convert digital audio to analog audio, wherein the digital audio receiver is located at the docking station and coupled to the second single audio pin (See Figure 4 Numbers 52 and 60). Agarwal does not explicitly disclose that the digital audio output is a Sony-Philips Digital Interface (S/PDIF) digital audio output. Agarwal does disclose that the digital audio output conforms to the Audio Codec '97 standard (See Column 8 Lines 26-50). AC97 discloses support for S/PDIF communications (See Chapter 6), which is uni-directional (See Section 6.1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Agarwal with an S/PDIF digital audio output, resulting in the invention of Claim 1, because S/PDIF is supported by the Audio Codec '97 standard used by Agarwal and because S/PDIF is an established consumer electronics digital audio interface (See Section 6.1 of AC97).

4. In reference to Claim 5, Agarwal and AC97 disclose the limitations as applied to Claim 1 above. Agarwal further discloses that the digital audio receiver includes an analog output (See Figure 4 and Column 7 Lines 41-44).

5. In reference to Claim 6, Agarwal and AC97 disclose the limitations as applied to Claim 5 above. Agarwal further discloses that a first power amplifier is coupled to the analog output (See Figure 4 Number 48 and Column 7 Lines 44-45).

6. In reference to Claim 11, Agarwal discloses a method of operating an information handling system including a portable portion (See Figure 4 Number 10') and a docking station (See Figure 4 Number 20'), the method comprising: generating, by the portable portion, a digital audio signal (See Figure 4 Number 58); sending the digital audio signal across a docking interface between the portable portion and a docking station (See Figure 4 Number 30), wherein the docking interface comprises a first multi-pin docking connector comprising a first single audio pin and a second multi-pin docking connector comprising a second single audio pin (See Figure 4 Number 30); converting the digital audio signal to an analog audio signal (See Figure 4 Numbers 52 and 60); and amplifying the analog audio signal (See Figure 4 Number 48 and Column 7 Lines 44-45). Agarwal does not explicitly disclose that the digital audio signal conforms to a Sony-Philips Digital Interface (S/PDIF) standard. Agarwal does disclose that the digital audio output conforms to the Audio Codec '97 standard (See Column 8 Lines 26-50). AC97 discloses support for S/PDIF communications (See Chapter 6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Agarwal with an S/PDIF digital audio output, resulting in the invention of Claim 11, because S/PDIF is supported by the Audio Codec '97 standard used by Agarwal and because S/PDIF is an established consumer electronics digital audio interface (See Section 6.1 of AC97).

7. In reference to Claim 15, Agarwal and AC97 disclose the limitations as applied to Claim 11 above. Agarwal further discloses performing a digital to analog conversion on

the digital audio signal after it passes from the first connector to the second connector of the docking interface, thus converting the digital audio signal to an analog audio signal (See Figure 4 Number 52 and Column 7 Lines 41-44).

8. In reference to Claim 16, Agarwal and AC97 disclose the limitations as applied to Claim 15 above. Agarwal further discloses amplifying the analog audio signal by a first audio amplifier thus providing a first amplified analog audio signal (See Figure 4 Number 48 and Column 7 Lines 44-45).

9. In reference to Claim 17, Agarwal and AC97 disclose the limitations as applied to Claim 16 above. Agarwal further discloses providing the first amplified analog audio signal to a line out output of the docking station (See Column 7 Lines 44-45).

10. In reference to Claim 21, Agarwal discloses an apparatus for operating a portable information handling system (IHS) comprising: a docking station coupled to the HIS (See Figure 4 Number 20'); means for generating a digital audio signal (See Figure 4 Number 40); means for sending the digital audio signal across a docking interface between the IHS and the docking station (See Figure 4 Numbers 30 and 58), wherein the docking interface comprises a first multi-pin docking connector comprising a first single audio pin and a second multi-pin docking connector comprising a second single audio pin (See Figure 4 Number 30); a converter for converting the digital audio signal to an analog audio signal (See Figure 4 Numbers 52 and 60 and Column 7 Lines 41-

44); and means for amplifying the audio analog signal (See Column 7 Lines 44-45). Agarwal does not explicitly disclose that the digital audio signal conforms to a Sony-Philips Digital Interface (S/PDIF) standard. Agarwal does disclose that the digital audio output conforms to the Audio Codec '97 standard (See Column 8 Lines 26-50). AC97 discloses support for S/PDIF communications (See Chapter 6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Agarwal with an S/PDIF digital audio output, resulting in the invention of Claim 11, because S/PDIF is supported by the Audio Codec '97 standard used by Agarwal and because S/PDIF is an established consumer electronics digital audio interface (See Section 6.1 of AC97).

11. Claims 7-10 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal and AC97 as applied to Claims 6 above, and further in view of US Patent Number 6,359,994 to Markow et al. ("Markow").

12. In reference to Claims 7 and 8, Agarwal and AC97 disclose the limitations as applied to Claim 6 above. Agarwal and AC97 do not disclose a second power amplifier coupled to the second output, as in Claim 7, and a subwoofer coupled to the second power amplifier, as in Claim 8. Markow discloses a docking station having a first set of speakers (See Figure 3 Numbers 300 and 302 and Figure 5 Numbers 504 and 505) coupled to a first power amplifier (See Figure 3 Numbers 320 and 322), and a

subwoofer (See Figure 1B Number 107, Figure 3 Number 304, and Figure 5 Number 508) coupled to a second power amplifier (See Figure 3 Number 324).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Agarwal and AC97 with the docking station subwoofer of Markow, resulting in the invention of Claims 7 and 8, in order to provide good sound quality with adequate bass in a portable computer without requiring cumbersome external speakers, thus increasing the enjoyment the user can get from the computer (See Column 2 Line 38 – Column 3 Line 4 of Markow).

13. In reference to Claims 9 and 10, Agarwal, AC97, and Markow disclose the limitations as applied to Claim 8 above. Markow further discloses that the docking station has a substantially closed volume having an aperture, as in Claim 9, and that the subwoofer is situated in the aperture to project sound therethrough, as in Claim 10 (See Figure 1B Numbers 100 and 107).

14. In reference to Claims 18 and 19, Agarwal and AC97 disclose the limitations as applied to Claim 17 above. Agarwal and AC97 do not disclose amplifying the analog audio signal by a second audio amplifier thus providing a second amplified analog audio signal, as in Claim 18, and providing the second amplified analog audio signal to a subwoofer loudspeaker, as in Claim 19. Markow discloses a docking station having a first set of speakers (See Figure 3 Numbers 300 and 302 and Figure 5 Numbers 504 and 505) coupled to a first power amplifier (See Figure 3 Numbers 320 and 322), and a

subwoofer (See Figure 1B Number 107, Figure 3 Number 304, and Figure 5 Number 508) coupled to a second power amplifier (See Figure 3 Number 324).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Agarwal and AC97 with the docking station subwoofer of Markow, resulting in the invention of Claims 18 and 19, in order to provide good sound quality with adequate bass in a portable computer without requiring cumbersome external speakers, thus increasing the enjoyment the user can get from the computer (See Column 2 Line 38 – Column 3 Line 4 of Markow).

15. In reference to Claims 20, Agarwal, AC97, and Markow disclose the limitations as applied to Claim 19 above. Agarwal further discloses that the docking station exhibits a substantially closed volume (See Figure 1 Number 20). Markow also further discloses that the docking station exhibits a substantially closed volume (See Figure 1B Number 100).

Claim Rejections - 35 USC § 112

16. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the Applicant regards as his invention.

17. Claims 11 and 15-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

18. In reference to Claims 11 and 21, it is unclear as to how the digital audio signal is sent across the docking interface, as there is no connection between the first docking connector having a first single audio pin and the second docking connector having a second single audio pin.

19. Claim 15 is dependent upon cancelled Claim 14. For the purposes of evaluating prior art, the Examiner will assume Claim 15 to be dependent upon Claim 11.

20. Dependent claims inherit the indefiniteness of their parent claims and are rejected under similar reasoning.

Response to Arguments

21. Applicant's arguments filed 20 February 2007 have been fully considered but they are not persuasive.

22. Applicant has argued that Agarwal does not teach a docking interface with two docking connectors each having a single audio pin, as the docking interface of Agarwal

has two docking connectors each requiring five audio pins to transmit audio signals (See Page 6). In response, the Examiner notes that the docking connector is not limited to having only a first single audio pin and a second single audio pin. The claim language uses the transitional term "comprising", which is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *Mars Inc. v. H.J. Heinz Co.*, 377 F.3d 1369, 1376, 71 USPQ2d 1837, 1843 (Fed. Cir. 2004); *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003); *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997); *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948); and *Gillette Co. v. Energizer Holdings Inc.*, 405 F.3d 1367, 1371-73, 74 USPQ2d 1586, 1589-91 (Fed. Cir. 2005). Thus, there are no limitations in the claims which prohibit the docking connector from having further single pins, as each individual pin is, by it's very nature, a single pin.

23. Applicant has argued that AC97 teaches away from the claimed subject matter and thus there is no motivation to incorporate S/PDIF into the docking station of Agarwal (See Pages 7-8). In response, the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir.

1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, although AC97 discloses drawbacks to the use of S/PDIF, it also discloses benefits, namely that S/PDIF is an established consumer electronics digital audio interface (See Section 6.1). Further, AC97 explicitly discloses that it supports S/PDIF (See Chapter 6). Thus, one of ordinary skill in the art, when constructing the device of Agarwal would have been motivated to use S/PDIF, because Agarwal conforms to the AC-97 standard (See Column 8 Lines 26-50), and AC-97 explicitly supports the use of S/PDIF (See Chapter 6).

24. Applicant has argued that using an S/PDIF interface in Agarwal would destroy the intended function of Agarwal, as Agarwal discloses bidirectional communications (See Page 8). In response, the Examiner notes that Agarwal conforms to the AC-97 standard (See Column 8 Lines 26-50), and thus S/PDIF is supported, as S/PDIF is expressly supported by AC-97 (See Chapter 6). Agarwal does not disclose that each communication line of the bidirectional connection is a bidirectional communication line, and one of ordinary skill in the art would recognize that a bidirectional communication line can comprise multiple unidirectional communication lines for transmitting data in opposite directions, such as, for example, a line for transmitting and a line for receiving. Therefore, contrary to Applicant's assertion, Agarwal could receive external audio, mix it, and send it back out using unidirectional connections. Thus, the use of S/PDIF in the system of Agarwal would not destroy the intended function of Agarwal.

Conclusion

25. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Thomas J. Cleary whose telephone number is 571-272-3624. The Examiner can normally be reached on Monday-Thursday (7-3), Alt. Fridays (7-2).

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Mark Rinehart can be reached on 571-272-3632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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PRIMARY EXAMINER

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